

# Additions and Corrections to Two Recent Articles on Ovulidae (Gastropoda)

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IN TWO RECENT ARTICLES describing a total of 17 new species of Ovulidae (CATE, 1970; AZUMA & CATE, 1971), the paragraphs containing the discussions of the various species, and their respective comparisons with other related species, were inadvertently omitted due to several unfortunate circumstances. I therefore offer them here-with, with my apologies, in order to validate the new species in conformance with the International Code on Zoological Nomenclature (ICZN Art. 13a (i)).

Another error, as yet unexplained, occurred in the preparation of the first plate accompanying the paper by AZUMA & CATE. A corrected plate accompanies this issue of the Veliger and it is suggested that this plate be substituted for the misnumbered plate.

To CATE, 1970: A new species of Japanese Ovulidae. The Veliger 13 (2): 181, Figure 1.

*Primovula azumai* CATE, 1970 most closely resembles *P. mariae* (SCHILDER, 1941); however, *P. azumai* is less rhomboid, more roundly ovate; it has a more pointed ad-apical terminal beak which lacks projecting teeth; it is bulbously rounded dorsally, without the transversely angled dorsal ridge of the Schilder species, and finally, *P. azumai* has a rich, honey-yellow color instead of being entirely white.

To AZUMA & CATE, 1971: Sixteen new species and one new genus of Japanese Ovulidae. The Veliger 13 (3): 261 - 268; figures 1 through 16.

1. *Prionovolva* (*Prionovolva*) *aenigma* AZUMA & CATE, 1971 (Figure 1) appears to be most closely related to *Ovula hervieri* HEDLEY, 1899, but it differs from that species significantly by its more rounded form, rather than being subpyriform; by lacking the typical overall dorsal striation of *O. hervieri*, being smooth and glossy instead; by possessing a differently formed funicular projection on the rear base; by having a greater number of teeth

on the outer lip, and by a different arrangement of its color pattern.

2. *Prionovolva* (*Prionovolva*) *nebula* AZUMA & CATE, 1971 (corrected Figure 4) appears to most closely resemble *P. nipponensis* (PILSBRY, 1913), but clearly differs from that species by its more elongately narrow shell, by its more narrowly projecting adapical terminal beak, by a flatter plane on the outer lip, by the more developed teeth on the outer lip, and by possessing a distinct dorsal color pattern.

3. *Pseudosimnia* (*Diminovula*) *incisa* AZUMA & CATE, 1971 (Figure 3) may be compared with *P. punctata* (DUCLOS, 1831) as its most closely related form, but it differs from *P. punctata* in that it is much more slender with more elongate terminal processes, a straighter aperture, a crenate funiculum, and its teeth at the rear of the outer lip project beyond the periphery of the lip; also, the dorsal spotting of *P. incisa* is less distinct than that of *P. punctata*.

4. *Primovula virgo* AZUMA & CATE, 1971 (corrected Figure 2) most closely resembles *P. verconis* (COTTON & GODFREY, 1932) among its congeners, but is larger, with a prominent funicular process that is apparently lacking in *P. verconis*; *P. virgo* has a deeply incised dorsum, which seems to be lacking in the worn type specimen of *P. verconis*, and in *P. virgo* the peripheral teeth on the outer lip are lengthened into distinct projections.

5. *Primovula horimasarui* AZUMA & CATE, 1971 (corrected Figure 6) somewhat resembles *P. depressa* (SOWERBY 3<sup>rd</sup>, 1875), but differs by being smaller, lacking in dorsal color, by having a more contorted aperture with the inner line of the outer lip more acutely angled; by possessing an angled funicular ridge on the rear base, and its terminal beaks project at a different angle than those of *P. depressa*.

6. *Primovula colobica* AZUMA & CATE, 1971 (corrected Figure 5) seems to resemble *P. mariae* (SCHILDER, 1941)

very closely, and may eventually, upon the discovery of additional specimens, be considered as a subspecies of *P. mariae*. However, despite the mutilation of the type specimen of *P. colobica* it seems to differ from *P. mariae* in the following respects: it has a more pyriform shell outline, the outer lip teeth are not lengthened, it has a more rigid, elevated and narrowed abapical base, it has a broader, more flattened fossular flange, and a much more colorful shell.

7. *Primovula myrakeenae* AZUMA & CATE, 1971 (Figure 7) is rather closely related to *P. azumai* CATE, 1970, but *P. myrakeenae* has a much broader, more bulbous shell form, less tortuous terminal beaks, and is much less prominently striate dorsally; it also has a broader, more curved aperture, less developed outer lip with finer, weaker teeth; also the color patterns of the two species are different.

8. *Primovula mucronata* AZUMA & CATE, 1971 (Figure 8) may be compared with *P. azumai* CATE, 1970, but it is more narrowly ovate and elongate; it lacks the central dorsal striae; it has a straighter and more even aperture, more simple terminal beaks, more numerous teeth on the full length of the outer lip, which lacks the angles and constrictions present in *P. azumai*; the basic color of the shell is different and so, also, is its color pattern.

9. *Primovula tosaensis* AZUMA & CATE, 1971 (Figure 9) most closely resembles *P. inflexa* (SOWERBY<sup>2nd</sup>, 1832), but differs from that species by being a smaller, less ovate, narrower form with a less sharply formed, inflected funiculum; by having the base constricted in front; it also has a much narrower aperture with an angled and serpentine edge to the outer lip, and is a solid grey color dorsally.

10. *Phenacovolva tayloriana* AZUMA & CATE, 1971 (Figure 10) possesses some of the morphological aspects of *P. recurva* (A. ADAMS & REEVE, 1848) but *P. tayloriana* is a much smaller species, with a more ovate, less angled dorsum in the central portion; it has shorter, broader, more open terminal canals and aperture, and it has a more prominent thickening of the outer lip.

11. *Phenacovolva kiiensis* AZUMA & CATE, 1971 (Figure 11) most closely resembles *P. subreflexa* (A. ADAMS & REEVE, 1848), but *P. kiiensis* has narrower and more recurved terminal beaks; it has a less angled outer lip and a broader aperture, and a different combination of shell colors.

12. *Phenacovolva improcera* AZUMA & CATE, 1971 (Figure 12) has many of the shell characteristics of *P. angasi*

(REEVE, 1865), but it is much smaller; it has a striate, rather than glossy, polished dorsum; it has sharper and more pointed terminal ends, with a less constricted base in front; and the color is a different shade of white, often with brown terminal tips.

13. *Phenacovolva yoshioi* AZUMA & CATE, 1971 (Figure 13) may be compared with *P. piragua* (DALL, 1889), but appears to differ from that species by having a distinct dorsal striation over the entire dorsum instead of only faint striations at the terminal ends; it has a more flattened base and a narrower aperture; the adapical terminal beak is more recurved, and the shell is more colorful, with a different combination of shell colors than those in *P. piragua*.

14. *Kuroshiovolva shingoi* AZUMA & CATE, 1971 (Figure 14) is so unusual in form that it was necessary to erect a new genus for it; therefore it is difficult to single out any other ovulid species with which to make a comparison. Perhaps it can best be compared with the form of the razor clams, or *Ensis* species, although of course it is not a pelecypod. There is no constriction of the outer lip, as seen in the other species of Ovulidae.

15. *Pseudosimnia (Diminovula) fulguris* AZUMA & CATE, 1971 (Figure 15) very closely resembles *P. florida* KURODA, 1958, but when viewed under magnification it seems different in the following respects, the similar dorsal pattern notwithstanding: *P. fulguris* has longer, more squarely blunt terminal beaks; a broader, more flattened outer lip with less numerous, larger and more weakly formed teeth; it has a broader, more convex columellar-fossular channel, and is transversely striate dorsally, with broader and deeper sculptured lines.

16. *Primovula fumikoeae* AZUMA & CATE, 1971 (Figure 16) somewhat resembles *P. rhodia* (A. ADAMS, 1854); however, it differs by being larger and broader; it has a more angled dorsal hump; it lacks the constriction of the abapical base, and it has a narrower outer lip with weak, poorly formed teeth.

### Literature Cited

AZUMA, MASAO & CRAWFORD NEILL CATE

1971. Sixteen new species and one new genus of Japanese Ovulidae (Gastropoda). *The Veliger* 13 (3): 261 - 268; 2 pls.; 8 text figs. (1 January 1971)

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1970. A new species of Japanese Ovulidae (Gastropoda). *The Veliger* 13 (2): 181; 1 text fig. (1 October 1970)